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ABSTRACT

Asserting that in order to determine the effectiveness of those in leadership positions accurately and fairly, an understanding of how individuals and groups of individuals construct their notions of effective leadership within complex organizations must be developed. This study sought to: (1) define and measure effective leadership empirically (in this case, the effectiveness of deans of colleges in one university) and (2) examine individual and group characteristics that may affect the perceptions of effective leadership within the academic organization. Faculty and staff were surveyed on several dimensions of their dean's leadership effectiveness: vision and goal setting, management of the unit, interpersonal relationships, communication skills, research/professional/community endeavors, quality of the unit's education, and support for institutional diversity. Demographic data on respondents and deans and structural variables of the academic units were also included in the analysis. Findings indicated that unit size and external dollars generated are positively related to perceptions of leadership effectiveness; that women are viewed as better leaders than men; and that the respondent's place in the organization affects his or her perception of the dean's leadership effectiveness. (Contains 67 references.) (EV)

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# MAPPING THE DOMAINS OF EFFECTIVE LEADERSHIP: THE CASE OF DEANS AND DIRECTORS

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# MAPPING THE DOMAINS OF EFFECTIVE LEADERSHIP: THE CASE OF DEANS AND DIRECTORS

Despite countless efforts to define and understand leadership, it remains an oft-debated and even controversial construct. Explaining effective leadership is even more elusive and continues to intrigue and challenge the best of scholars, administrative teams, consultants and, most of all, leaders themselves. Leaders are deemed effective--or ineffective--by informal assessments of their leadership style, the performance of their duties and responsibilities, and even, at times, their individual traits or qualities. Such judgments flourish in organizations, and higher education is no exception. Faculty and staff members frequently comment on the effectiveness of their campus leaders based upon a gambit of personal perceptions.

It may be argued, however, that the effectiveness of leaders in higher education is, for the most part, a matter of perception (Fincher, 1996). There are few shared norms about appropriate outcome measures for leaders in higher education, as opposed, for example, to business in which leaders' performance may be assessed based on profit and growth. In fact, in colleges and universities there is no commonly accepted definition of effective leadership, and even less agreement about which aspects of a definition may be most important to effectiveness (Bensimon, Neumann, & Birnbaum, 1989; Birnbaum, 1992; Dill, 1984; Fincher, 1996; Neuman & Bensimon, 1990; Whetten & Cameron, 1985).

Individual perceptions of effectiveness are based on what leaders say and do; that is, perceptions are grounded in the individual's experience with the leader's behavior, either directly or indirectly. From these experiences, individuals determine whether they believe leaders are effective or ineffective (Birnbaum, 1989; Fincher, 1996; Whetten & Cameron, 1985). Perceptions then are crucial to the viability of the leader's position within the institution.

Perceptions may even be collected from a defined group of individuals in order to "evaluate" the leader's performance. Such measurement of perceptions may constitute a "high stakes" evaluation for the individual leader (Heck, Johnsrud, & Rosser, in press), because they may lead to decisions about promotion, salary augmentation, contract renewal, or dismissal.

In order to determine the effectiveness of those in leadership positions accurately and fairly, we must understand how individuals, as well as groups of individuals, construct their notions of effective leadership within complex organizations. Therefore, the purpose of this study is first to define and measure effective leadership empirically (in this case, the effectiveness of deans of colleges in one university) and second, to examine individual and group characteristics that may affect the perceptions of effective leadership within the academic organization.

## Effective Leadership

One of the problems with the concept of leadership is the ambiguity of its definition and measurement (Pfeffer, 1977, 1978). In and of itself, leadership is among the most studied and least understood subjects (Bennis & Nanus, 1985; Burns, 1978). Leadership in organizational contexts is complex and multidimensional (Yukl, 1989, 1993). That complexity has attracted scholars from a variety of disciplines who bring contrasting perspectives to the subject. For example, scholars of psychology tend to focus on the individual and view leadership as an outcome of managerial effectiveness, success in influencing people, and developing commitment to task objectives (Yukl, 1989). Similarly, Chemers (1993) defines "leadership" as a process of social influence, and "effective leadership" as the successful application of the influence to mission accomplishment. He believes that effective leaders are able to obtain the cooperation of

other people and to harness the resources provided by that cooperation to the attainment of goals. Moreover, Boyatzis (1982) defines the effective performance of a leader as the attainment of specific results (i.e., outcomes) required by the job through specific actions while maintaining or being consistent with policies, procedures, and conditions of the organizational environment.

A more sociological perspective conceives of leadership effectiveness as the degree of success with which a group performs the primary assigned task (Fiedler & Garcia, 1987). Fiedler and Garcia contend that, if reliable and objective measures of the group's performance on tasks are not available, other types of outcome measures such as morale and satisfaction within the work unit may be important organizational factors in measuring effective leadership. Similarly, Bryman (1986) refers to effective leadership as a two-way influence process and notes that the leader must be responsive to the group's position, as well as to the organization's goals to be viewed as legitimate. Hence, leadership implies a relational dynamic that depends on the properties of the influencing leader, the situation or task, and the group being influenced. These conceptions define leadership as a mutually dependent process in which the leader is able to garner group support to achieve specified organizational goals.

Conventional leadership approaches place considerable weight on the behavioral displays of the leader (Meindl, 1993). In a social psychological approach, Meindl distinguishes between process and outcome measures of leadership effectiveness. He argues that behavioral displays of the leader are essentially "process" measures of effective leadership: they are not outcomes of value in and of themselves, but valuable in terms of their intended or likely impact on group productivity and the satisfaction of members. In contrast, group performance and behavioral displays of group members are significant "outcome" measures of leadership. Meindl (1990)

argues that performance cues, such as the behavioral displays of the leader, have been known to alter group members' reports of leadership. He suggests that individuals have formed implicit theories and cognitive prototypes of what effective and ineffective leadership is defined in behavioral terms (p. 100). Meindl contends that this view is symptomatic of the emergence of leadership as a way of thinking on the part of group members.

Leadership as a function of group perception is also reflected in Hollander's (1964, 1978, 1993) work, in that he believes that leadership effectiveness involves a group process with the leader as the directive element. Hollander argues that the process involves two-way influence aimed primarily at attaining mutual goals, such as those of a group, organization, or society. Followers are responsive to what leaders say and do, and leaders are responsive to followers. Similarly, Clark and Clark (1990) view effective leadership as a central concept used in studies of group dynamics, with the selection of leaders within a group being part of the method, as well as part of the outcome, of the research. Accordingly, leader effectiveness depends upon an equity in social exchange with the leader gaining status and exercising influence while helping the group to achieve desired mutual outcomes, as well as the individual leader achieving social rewards, such as recognition (Hollander, 1964, 1978). Hollander contends that this social exchange, or transactional approach to effective leadership, involves a trading of benefits.

The conceptual foundations of transactional social exchange appear highly adaptable to certain features of academic organizations, such as governance as a collective process that involves all important constituencies, with particular emphasis given to the participation of the faculty (Bensimon et al., 1989). Within the academy such principles as shared governance, consultation, and leaders who are "first among equals" undergird the normative values

(Bensimon et al., 1989; Martin & Samels, 1997). Transactional social exchange attends to these multiple foundations of leadership and thus appears useful in understanding effective leadership of academic deans in higher educational institutions.

Academic Deans

College deans have the ability to exert power, control information, allocate resources, and assess the performance and promotions of their faculty and staff. They serve as academic facilitators between presidential initiatives, faculty governance, and student needs (Astin & Scherrei, 1980). As such, they are often referred to as the academic midlevel administrators in higher education (Morris, 1981; Roaden, 1970). By virtue of their midlevel placement within the organizational structure, they are in the center of controversy, conflict, and debate; they play the role of coalition builder, negotiator, and facilitator. Dill (1980) contends that the mid-management position of deans in most institutions is an amorphous, variegated and, perhaps ultimately, indescribable role. Nonetheless, efforts to describe deans include: "doves of peace" intervening among warring factions, "dragons" holding internal and external threats at bay, and "diplomats" guiding and encouraging people who live and work in the college (Tucker & Bryan, 1991, p. ix).

Even though individual deans have achieved remarkable power and status, there are many signs pointing toward an ebbing of powers (Dill, 1980). The once held vision of the dean as a quiet scholarly leader has been replaced by an executive image of the dean as politically astute and economically savvy (Gmelch et al., 1999). The deans' delicate balancing act of their varying roles and responsibilities are often viewed differently by faculty, provosts, students, and deans

themselves (Gmelch et al., 1999). These differing perceptions of the position place multiple, conflicting, and more recently, consequential pressures upon deans (Gmelch et al., 1999; Kapel & Dejnozka, 1979). Dill contends that the deanship needs help and that new demands from various constituencies for miracles of performance are being added to old expectations, which were presumptuous enough (p. 262)!

Evaluating the Effectiveness of Deans. Research on deans or "deaning" has been primarily descriptive in nature and refers to specific tasks and challenges (Gould, 1964; Morris, 1981; Tucker & Bryan, 1991) and or the roles and functions of deans (Dibden, 1968; Dill, 1980; Griffiths & McCarty, 1980; Lasley & Haberman, 1987; Morris, 1981; Seldin, 1988; Tucker & Bryan, 1991). Rather than providing empirical studies that address the effectiveness of their leadership, most authors focus on specific topics such as their transition from research and teaching to academic management (Arter, 1981); their dilemmas in leadership (Cleveland, 1960); their position of conflict (Feltner & Goodsell, 1972); their management skills and mobility (Sagaria, 1988; Sagaria & Krotseng, 1986); their career paths (Moore et al., 1983); and their role in governance and decision making (Baldridge, 1971). There is, however, little empirical research that measures their effectiveness as leaders, least of all, as perceived by their faculty and administrative staff.

In one recent study of dean's perceptions of their own effectiveness, Wolverton et al. (1999) found that role ambiguity (e.g., knowing job responsibilities, having clear goals for the job, knowing amount of authority, knowing senior administrators' expectations) had a small negative effect on deans' perceptions of their job satisfaction, effectiveness, and commitment to the institution. The suggestion is that the less well articulated the role is, the less effective deans



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perceive themselves to be. The implication for assessing deans' effectiveness is evident: senior administrators need to articulate clearly the job responsibilities, authority, goals, and expectations that go with the role, in order to assess the individual's effectiveness in performing those identified role-related functions.

Understanding how deans are evaluated by faculty is a relatively new and unstudied phenomena (Matczynski, Lasley & Haberman, 1989). As noted earlier, researchers have been interested primarily in identifying the critical functions and roles of deans (Denenark, 1982; Morris, 1981; Morsink, 1987) and in delineating the qualities demonstrated by successful deans (Sivage, Bryson, & Okum, 1982). Learning to work with significant others (i.e., faculty and university administrators), is one of the essential tasks of deans (Matczynski, Lasley & Haberman, 1989). In their study of faculty's perception of the qualities that deans should possess, they found that education faculty ranked communication skills as the most important skill, and affirmative action as the least important skill. Faculty seek a dean who exhibits a capacity to articulate the unit's mission and to define the purposes of the unit and the major issues of the profession to various constituencies. Faculty also feel that deans should be held accountable for the academic standards of the unit. They expect deans to recruit high quality faculty and to ensure that faculty maintain high academic standards in their classrooms. Senior administrators seem to have similar criteria for evaluating deans (Lasley & Haberman, 1987). When Vice Presidents or Vice Chancellors of Academic Affairs were asked to evaluate the performance criteria for successful deans, they responded by saying that the success or failure of a dean [of education] is contingent upon several factors: faculty expertise, economic resources, and social circumstances.

The Dilemma of Deaning. The deanship offers great challenges and opportunities. As an administrator in the middle, the dean must learn how to work with a range of interests, individuals, and groups. They essentially serve two masters: the faculty and the senior administration. Morris (1981) describes the faculty as fiercely idiosyncratic and independent in their daily behavior. He believes that the nature of their work engenders a special pride in not being responsive to institutional rules and regulations. Thus, faculty represent a constituency that is almost purely political in character; that is, they cannot be commanded or led, except by the initiatives and cohesion of their own membership, not by a dean (p. 119). Morris suggests that because of the nature of their work, faculty are not expected to be familiar with the administrative perspective of the university. He contends that the perception of a chain-of-command mentality is an object of faculty scorn.

Senior administration typically includes the president, provost, academic vice president, and the vice chancellor. The academic vice-president (or provost) relies on the dean to carry out the academic mission of the dean's academic unit. It is clear that both the academic vice-president and the dean are pushed and pulled by many conflicting forces and demands. Tucker and Bryan (1991) contend that in all the various ways in which the dean and the academic vice-president interact, the dean is always on trial. They argue that deans are constantly judged by their actions and reactions to the problems, opportunities, and challenges they face (p. 197). This impromptu evaluation of the quality of the dean's leadership is confirmed and reconfirmed over a period of several years of such interactions with senior administration (i.e., one-on-one, council meetings). In addition to senior-level assessments of the dean's performance, subordinate stakeholders within the dean's unit are also evaluating the effectiveness of the dean's leadership.



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Therefore, in an effort to move beyond such anecdotal evidence, the intent of this study is to empirically measure those dimensions of leadership that relate to deans' effectiveness as perceived by the faculty and administrative staff who interact with them.

## The Proposed Conceptual Model

The "transactional" model of leadership, developed largely from a social exchange perspective, emphasizes the implicit relational qualities of the transaction that exist between leaders and followers, which, in turn, yields perceptions of effectiveness (Hollander, 1964, 1978; Hollander & Julian, 1969, 1970). Hollander's (1978) transactional approach to leadership involves the relationship of three elements, each complex within itself. These elements include the leader, the followers, and the situational or behavioral processes that exist between them. This transactional approach to leadership involves the *leader's* own competencies, motivations, characteristics, legitimacy, and the ability to define organizational situations; the *followers'* expectations of the leader's competencies, motivations, and characteristics; and *behavior* that the leader exhibits conducting tasks, allocating resources, enforcing institutional and unit rules and policies, and supporting the culture, history, and mission of the organization.

Hollander (1978) contends that followers will accept and tolerate a leader's behavior that deviates from their expectations more readily if the leader engages in actions that demonstrate expertise and conformity to the group's norms. This constitutes a social exchange, that is, a process of mutual influence and facilitating, rather than directing, the work of followers. Social exchange enables the leadership of highly educated professionals--those who are not likely to be

led. This exchange seems particularly relevant to understanding the influence of deans in academic organizations and faculty who rarely consider themselves followers.

Extending our ability to measure effectiveness may also inform our theoretical understanding of leadership. Transactional social exchange allows us to think about how leadership is negotiated as a mutual and reciprocal process between leaders and followers--a process that responds to the mutual needs and wants of both leaders and followers. Figure 1 provides a theoretical representation of the transactional social exchange model as applied to higher education. The model illustrates the reciprocal exchange processes that exist between the leaders (in this case, deans), followers (in this case, faculty and staff), faculty and staff perceptions of the dean's leadership behavior, and in turn, faculty and staff judgments of the dean's effectiveness. The model also suggests that the behavior and perceptions of faculty and staff may well affect the dean's behavior and, in turn, the perceptions of his or her effectiveness. The use of transactional social exchange seems appropriate to explore the organizational, individual, and behavioral meanings that may explain deans' effective leadership.

Figure 1. Theoretical Model of Transactional Social Exchange

The Proposed Multilevel Model

Our concern in this study is to further our understanding of how individuals who are nested within units, or subunits, may perceive the actions of their leaders. In the past, research has been hampered by a lack of analytical tools that can adequately address the various hierarchical structures and the complexity of interrelationships that comprise organizational processes. As Johnsrud, Heck and Rosser (2000) note, previous research conducted at a single level of analysis offered few options for modeling this complexity of organizational processes. In contrast, multilevel analysis provides several conceptual and technical advantages for exploring the leadership effectiveness of university deans. First, it provides a more refined environment to test theoretical relationships because the variables comprising the model can be specified at the correct organizational levels (i.e., individual level, group level). As previous research has suggested (Yukl 1989; Meindl, 1990; Hollander, 1993) leadership perceptions have an individual and group component. Multilevel modeling provides a framework to specify which variables belong to which level, and which direct effects and cross-level interaction effects can be expected (Hox, 1995). In the case of evaluating personnel, it becomes important to differentiate those variables that affect individual perceptions of leadership as opposed to those that reflect the group's collective view.

A second advantage is that multilevel modeling provides an estimate of the extent to which individuals in a particular context all share a similar view of that context and a means to incorporate that similarity directly into the analysis. Because individuals are clustered in groups, they share some common characteristics (e.g., values, perceptions, experiences). Ignoring the presence of these clustering effects (or similarities among individuals such as belonging to a

college or a department) in the structure of the data can lead to a biased interpretation of the leader's performance.

Third, the multilevel model provides greater precision in accounting for measurement error within and between units (e.g., estimates of standard errors, measurement errors associated with observed variables). Individuals may react cognitively, affectively, and behaviorally in accordance with their own definitions of organizational leadership. From this standpoint, leadership effectiveness is likely perceived somewhat differently by each individual faculty or staff member. Earlier analyses that aggregated individual responses to the group level failed to acknowledge the within-group variability and therefore distorted relationships examined between groups. In multilevel modeling, however, within-group performance assessments may be adjusted for individual faculty and staff members' differing perceptions in evaluating each dean. After these adjustments, the between-group assessments represent the "true-score" variability (i.e., variance due to differences in effectiveness among persons) after the differences in individuals' perceptions and measurement errors have been removed (Cronbach et al., 1972; Muthen, 1994; Shavelson & Webb, 1991). The goal of the multilevel analysis is to separate the true differences in leadership effectiveness between deans from individuals' varied perceptions of their own dean's effectiveness and other potential sources of measurement error associated with individuals and groups.

Currently, little research exists that can simultaneously assess the effective leadership of administrators from the perceptions of the group and the individuals within the groups (Heck, Johnsrud, & Rosser, in press). As shown in Figure 2, the proposed model of leadership effectiveness posits that structural and demographic characteristics of individual faculty and staff

may affect their perceptions of leadership to some extent. Structural variables could include one's role (e.g., faculty, staff, department chair) and status (e.g., academic rank, tenure status, administrative position) within the organization. For example, we might expect department chairs to rate deans in more positive terms due to their closeness of proximity to the dean. Similarly, individual demographic characteristics such as sex and race/ethnicity may influence perceptions. For example, there may be a tendency on the part of faculty and staff to rate leaders as more effective if they are the same sex and/or ethnicity as the person doing the rating. Alternatively, it may be possible that different groups of faculty have differential experiences with the university's administrative structure (Johnsrud & Heck, 1994). At the individual-level the variables are included as controls for the perceptual differences among the individual faculty and staff based on their demographics.

Figure 2. The Proposed Multilevel Model

On the other hand, at the group level, structural variables may explain differences in each dean's effectiveness relative to the set of deans. For example, the amount of resources (e.g., external, instructional, non-instructional) allocated to the unit may affect differing perceptions of leadership effectiveness. At this level, we are providing a test of the notion that deans' effectiveness is in part related to their ability to garner valued resources for their unit (Chemers, 1993; Fiedler & Garcia, 1987). There is pressure on deans to secure external resources to supplement decreased general fund allocations. Prestige and power may also accrue to units that can increase faculty FTEs, as this allows increased student enrollments, more faculty research productivity, and increased course selection. We might therefore expect deans in units with greater external dollars and larger FTEs to be perceived as more effective. The type of unit (e.g., organized research group, professional schools, arts and sciences) is also included as a structural variable to determine whether the context in which deans work is related to the assessment of their effectiveness. Finally, the demographics of the dean (e.g., sex, years of experience) may also have an impact on their perceived effectiveness.

## Method

### Sample

Faculty and staff were asked to evaluate the performance of their deans based on several dimensions of their leadership role. In an effort to determine each dean's overall effectiveness, surveys were mailed to all 1,950 faculty and staff members at a major public research university reporting to the 22 deans. The units consisted of various colleges, schools, and programs within the areas of arts and sciences, professional schools, organized research groups, and service and

support areas headed by deans or in some cases, directors (In this study, only those directors were included who hold positions equivalent to deans and who report directly to vice-presidents). Three mailings yielded 865 usable responses for a 54 percent return rate.

The respondents in this study consisted of full-time faculty and administrative staff members reporting to selected deans. The faculty were classified as instructors, researchers, specialists, and librarians. The administrative staff consisted of the deans' executive/managerial staff, administrative, professional and technical staff, and clerical/secretarial employees. The academic rank/staff position categories held by the respondents consisted of 68 (7.9%) instructors, 116 (13.4%) assistant professors, 128 (14.8%) associate professors, 243 (28.1%) full professors, 15 (1.7%) managerial/executives, 150 (17.3%) administrative, professional, and technical staff, and 89 (10.3%) clerical/secretarial or civil service employees.

Sex of the respondents was fairly balanced with 405 (46.8%) females and 451 (52.1%) males. The race and or ethnicity reported by the respondents indicated there were 383 (44.3%) faculty and staff classified as minorities (African-American, Chinese, Filipino, Japanese, Korean, Native American, Pacific Islander, and mixed/other) and 456 (52.7%) are non-minority (Caucasian). The faculty and administrative staff respondents in this study proportionately represent the demographic populations of the institution (University Faculty and Staff Report, Fall 1999).

Instrumentation and Variables

The instrument was designed to gather information about deans' effectiveness in fulfilling their leadership roles and responsibilities. The following seven domains of

responsibility were developed from the professional literature on deans and a review of existing evaluation instruments: *Vision and goal setting, management of the unit, interpersonal relationships, communication skills, research/professional/community endeavors, quality of the unit's education,* and *support for institutional diversity.* The leadership domains were defined by 58 Likert-type items (5-point scales). A response of "1" indicated the respondent had an unsatisfactory perception of the dean's performance on that item, and a response of "5" indicated an outstanding level of performance on that item. A choice of either NA (not applicable) or DK (don't know) was also available as an answer on each item.

Analyses were conducted on the data in order to determine the instrument's reliability. One common approach to the estimation of reliability is to examine a domain's internal consistency. The alpha coefficients (in parentheses) calculated for each scale were as follows: vision and goal setting (.98), management of the unit (.97), support for institutional diversity (.97), interpersonal relationships (.98), communication skills (.98), research/professional endeavors (.97), and the quality of education in the unit (.98). All items from the instrument that comprise each scale (construct) were retained and considered reliable for further analysis.

In addition to the scaled leadership items, individual-level (within-group) demographic characteristics of the respondents were also collected. The variables included sex, minority status, and years worked with the dean. The individual-level structural variables included organizational role (department chair, faculty, or staff), faculty rank (instructors, assistants, associates, and full professors) and staff member position. Dummy coding (e.g., females=1 and males=0) was used as needed to handle the categorical nature of the demographic data.

Several variables at the organizational-level (between-group) were also included in the analysis. Structural variables included: the amount of resources allocated to the unit (i.e., external dollars, instructional dollars, non-instructional dollars), size of the unit (i.e., FTEs of faculty and staff), and the type of group unit (e.g., professional schools, organized research, arts and sciences). There were two demographic variables at the organizational-level: sex of the dean leading the unit, and years in the position as dean. As conceptualized in Figure 3, the proposed operational model is designed to simultaneously investigate the effect of structural and demographic characteristics on the domains of effective leadership as perceived by the respondents at the individual-level (within) and organizational-level (between).

Figure 3. The Proposed Operational Model

Intraclass Correlations

The first step is to determine whether a multilevel analysis is warranted. To do so, we calculate intraclass correlations (ICCs), which describe the percentage of total variance in each leadership domain that lies between groups.[1] More specifically, larger coefficients suggest greater "true-score" differences (i.e., differences in effectiveness not attributable to errors associated with individual raters) in leadership between individual deans (Heck et al., in press). The results in Table 1 indicate that a substantial amount of variance in the management of the unit, interpersonal skills, and research/professional endeavors exists between deans (ICC=.157, .128, and .159, respectively). This suggests that this set of deans differs more in terms of these domains of leadership. Smaller true-score variance is associated with vision and goal setting, communication skills, quality of education, and support for institutional diversity (ICC=.099, .091, .068, .091, respectively). As a group, these deans are more similar in these leadership domains.

**Table 1. Intraclass Correlations (ICC) by Leadership Domain**

| Leadership Domain | | SD | ICC |
|---|---|---|---|
| Vision and goal setting | 3.87 | .95 | .099 |
| Management of the Unit | 3.83 | .92 | .157 |
| Interpersonal Relationships | 3.91 | .90 | .128 |
| Communications Skills | 4.05 | .79 | .092 |
| Research/Professional/Community/ Campus Endeavors | 3.89 | .70 | .159 |
| Quality of Education | 3.86 | .84 | .068 |
| Support for Institutional Diversity | 4.00 | .77 | .091 |

Given there are differences between deans, the preliminary results in Table 1 represent the multilevel measurement and structural models of effective leadership proposed to address both the individual-level and group-level properties of the data. More specifically, the ICCs representing each of the domains (ranging from about 7% to 16%) indicate that leadership variability resides both within and between the units. As suggested previously, it is also important to emphasize that the observed variables in Table 1 are uncorrected for error. As Muthén (1994) notes, defining leadership effectiveness as a latent factor allows us to correct the observed measures for differing errors associated with each ICC (i.e., error associated with the similarity in perception among members of each unit) and reliability (i.e., errors associated with the items measured at the individual and group levels). Thus, defining leadership effectiveness as a multilevel construct provides results that would be given from perfectly reliable observed measures (Muthen, 1994). These adjustments for error will further provide more accurate estimates of the model's structural parameters.

The Multilevel Structural Equation Model

After determining that sufficient variance in leadership exists between groups, the next step is to define and measure the within- and between-group variance in the leadership effectiveness factor and to extend the model to include sets of predictors at both levels. Because underlying constructs cannot be directly measured (e.g., management, communication), they must be indirectly defined through a set of observed variables. Multilevel structural equation modeling (SEM) offers an advancement in the ability to simultaneously define multidimensional constructs such as leadership (i.e., through confirmatory factor analysis) and then test for the



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effects of group, demographic, and organizational role variables on the constructs. The validity of this proposed multilevel model is examined with *Mplus 1.04* (Muthén & Muthén, 1998) using the maximum likelihood fitting function. In the multilevel SEM approach to testing models, one tests the variance-covariance matrix implied by the model against the variance-covariance matrix of the actual data.

The fit of the multilevel confirmatory factor model can be assessed by the chi-square ($\chi^2$) test of model fit and the root-mean-square error of approximation (RMSEA). The chi-square is an inferential index that represents a test statistic of the fit of the model and is used when testing the null hypothesis that the proposed model fits the analyzed covariance matrix perfectly (Raykov & Marcoulides, 2000, p. 36). On the other hand, the RMSEA is a fit index that is widely used because it allows for a discrepancy of fit per degree of freedom in the model; that is, models with more parameters are favored in this index. The RMSEA index should be close to zero for a good fitting model.

The chi-square coefficient is 260.374 (100 df) and is significant (p=.000). Although the chi-square coefficient is significant, the $\chi^2$ to degrees of freedom ratio is 2.6 to 1. As a general rule of thumb, a ratio under 3 to 1 is considered excellent for a data set of this considerable size. The RMSEA value is .044, which is non-significant (p=.914). The results of this index suggest an excellent fit of the proposed multilevel model to the observed data. With unbalanced group sizes, however, these coefficients should be considered as approximate only (Muthen & Muthen, 1998).

As shown in Figure 4, the parameter estimates indicate that all seven domains contribute significantly to the measurement of a dean's leadership effectiveness both at the within-

(individual) and between- (organizational) group levels. All parameter estimates of the domains comprising leadership effectiveness are sizable and significant at both the within-group level (.73 to .95) as well as at the between-group level (.93 to .99).

From the variance components comprising the leadership effectiveness factor, we can also determine the percentage of leadership variance that lies between groups. This between-deans model corresponds to the actual difference in the performance attributable to the individual deans after accounting for other sources of variability (Heck et al., in press). In this case, the actual difference in effectiveness across deans is 13 percent (not tabled).[2] This coefficient represents the adjustment for unreliability associated with the differing intraclass correlations on the observed items comprising leadership (ranging from .07 to .17). Because within-group measurement errors are usually larger, this causes underestimation of the true between-group variation (Muthén, 1994). For purposes of analyzing deans' effectiveness, the other sources of variation can be considered as error variance (i.e., differences in individuals' perceptions within groups, measurement errors associated with items within and between groups, possible interactions).

Errors of measurement are represented in Figure 4 by short arrows. The errors associated with individuals' perceptions on each item comprising leadership effectiveness range from .10 to .47 (not tabled). In contrast, the errors associated with group perceptions of each leadership domain are smaller, ranging from .01 to .14 (not tabled). These coefficients provide information about the quality of measurement of each item comprising effectiveness at the individual and group levels. The methodological advantage of multilevel modeling is that the sources of error are removed from the analysis before considering the differences in leadership that exist among

the set of deans in the study. This improves the reliability and validity of inferences made about the assessments (Heck et al., in press).

Further evidence of the construct validity of the leadership composite can be provided by determining what individual-level and group-level variables account for faculty and staff perceptions of effective leadership. Figure 4 displays the magnitudes of each parameter estimate of the predictor variables on effective leadership. Within groups, only individuals' organizational role (i.e., department chairs) has a small, but significant impact on faculty and staff perceptions of effective leadership (.14). This suggests that chairs view the deans' leadership in more positive terms. We would not expect the other demographic variables to affect the perceptions of leadership effectiveness (i.e., years with dean -.02, females .03, minorities .01).

Figure 4. Multilevel Structural Model of Effective Leadership
(*Mplus* Standardized Estimates). Note: *Estimate is significant at p<.05

At the group-level, resources (i.e., external dollars) accrued to the unit (.39), and size of the deans' unit (FTEs) are significant predictors of the perceptions of effective leadership. We would expect these to be related to differences in leadership effectiveness. There is, however, no significant effect of instructional and non-instructional dollars allocated to the unit or type of group unit (e.g., organized research groups, professional schools) on the perceived effectiveness of leadership. Although we would expect these latter types of resources to be related to the perception of effectiveness, it may be that deans are not perceived to have the same amount of control over these funds. Sex of the dean (i.e., female deans) also has a significant and positive impact on faculty and staff perceptions of leadership (.41).

While being cautious about the group sample size (22 dean units), the overall adequacy of the model clearly supports its construct validity in accounting for both group and individual variability in effective leadership. As noted earlier, the results indicated that 13 percent of the total variance in effective leadership represents the true difference in effectiveness among these deans, and 87 percent of the total variance is related to individuals assessing their own dean's effectiveness. The finding suggests that while the perceptions of leadership are primarily individually held (owing to the greater range of individual views about each particular dean), there is also a "collective" element (or group similarity) to these views that should be the primary focus of organizational studies of leadership assessment. Multilevel modeling provides a more refined method of examining these individual and collective perceptions about leadership.

Additional evidence of the model's construct validity can be seen in the amount of variance in leadership perceptions accounted for at each level in the model. Errors in the equations (i.e., variance unaccounted for) are represented in Figure 4 by the short arrows next to the within-groups and between-groups effectiveness construct. As we argued previously, in evaluating performance or effectiveness, the concern for evaluators is with the actual differences between the deans that result from the analytic process. Between deans, the variance accounted for is 57 percent (unaccounted is 43%). This provides preliminary evidence that the model (and, hence, the instrument) discriminates more and less effective deans on the basis of valued group outcomes such as FTE size and external dollars. The model also discriminates more and less effective deans on the basis of their sex.

For the within-groups model (i.e., individuals assessing their own dean), only two percent (unaccounted is 98%) of the variance in leadership is explained by the demographic information associated with faculty and staff. Actually, in assessing effectiveness within groups, our primary concern is not with accounting for variance, as the variability in effectiveness due to individuals' perceptions of their own dean is treated as error in the model. This is because each group of individuals only assesses their own dean (as opposed to assessing all deans). In a separate analysis, we determined this component represents the largest source of error (over 70% of the unexplained variance) in this portion of the model.

The fact that only a small amount of variance is accounted for by the predictors within groups can actually be viewed as "good news." Certain groups are not experiencing deans' behavior differently in any systematic way; that is, we can assume that women or other underrepresented minorities are not perceiving deans' effectiveness differently based on their

differential experiences. On the other hand, the significance of the dean's sex at the between-group level has a very different meaning in terms of the assessment of effectiveness, because this represents the difference in their leadership effectiveness attributable to gender, after the various sources of error have been controlled.

## Discussion

There is an abundance of research and literature that attempts to define or describe what it takes to be an effective leader. Fundamentally, however, leadership in organizations is not about the attributes the leader has, but about what the leader is perceived to say and do in the social context of his or her unit. An important part of that social context consists of those assessments that individuals and groups form regarding the leader's effectiveness through interpersonal transactions. Although leadership in and of itself is often perceived as ambiguous, complex, and multidimensional, the concept of transactional social exchange creates order by identifying the mutual and reciprocal processes of organizing, planning, budgeting, and resolving issues. The transactional relationship between leaders and followers is maintained by the quality and effectiveness of those social exchanges and mutual influences--often referred to as the trading of benefits. Much of the literature on leadership in organizations recognizes the powerful interaction between leaders and their followers (Bass, 1981; Fiedler & Garcia, 1987; Hallinger & Heck, 1999; Hollander, 1978; Hollander & Julian, 1969).

Previous research has suggested that the perceptions of these effective or ineffective leadership interactions are socially constructed as an individual or group property of the social organization. Until recently, organizational researchers have been limited in their ability to

analyze their data either at the individual or group (organizational) level. Using a multilevel data analytical approach provides clarity and understanding in the definition and measurement of those interpersonal transactions that exist between leaders and followers within complex organizations. The findings from this research clearly support the view that effective leadership can be empirically defined and measured at both the individual and organizational levels. Not surprisingly, most of the variation in leadership effectiveness is related to individuals' somewhat unique views of and experiences with their dean. More importantly, after accounting for those individual differences in the assessment process, it is possible to ascertain the real differences in effectiveness that exist between deans.

In the case of academic deans, it is critical for them to understand what faculty and staff collectively perceive as important criteria to be an effective leader. Individual and group exchanges with the dean are constantly taking place within the organizational unit. The dean's behaviors and interactions clearly affect perceptions of leadership effectiveness at the group level. More specifically, larger unit size (number of FTEs) and greater resources generated (external dollars) translate into stronger group perceptions of leadership effectiveness. In the tough fiscal times experienced by this university, it may be that the replacement of positions is seen as critical to the college's productivity and performance (e.g., graduation rates, student advising and career placement, faculty publications). It is likely that the dean of the unit is viewed favorably for maintaining or replacing current personnel levels, or at least minimizing the increased pressure to perform with limited resources. On the other hand, larger units may also have greater flexibility to absorb reductions in staff and expenses more readily than smaller units.

Similarly, the resources generated by the unit in the form of external dollars is positively related to the group perception of effectiveness. Interestingly, dollars allocated from the central budget do not seem to influence the perception of the dean. Whether the external dollars are generated by the faculty or the dean, the dean has the authority to disseminate the overhead from these external dollars throughout the unit. Members within the unit can interpret the acquisition of valued resources as a reward and benefit for their contribution to the goals and mission of the unit, or members within the same unit may perceive the allocation of resources as a threat to their professional worklives. In the first case, the dean's leadership may be viewed as supportive and effective; in the latter case, the dean may be perceived as ineffective in the equitable dissemination of unit resources. In this case, we provide support demonstrating that perceptions of leadership effectiveness are related to the attainment of valued outcomes such as resources. This provides evidence of the construct validity of our definition of effective leadership.

Perhaps the most intriguing finding in this study is the relationship between the sex of the dean and leadership effectiveness. After controlling for several sources of within- and between-group variation (e.g., sex and race/ethnicity of the respondents, FTEs and external dollars, measurement errors), the results indicated that female deans were rated as more effective leaders. This finding parallels previous research conducted on the effectiveness of school principals--suggesting that female principals are rated as more effective leaders than their male counterparts (Heck, 1995). These results contradict some research in other fields about women rating supervisors more favorably than men, or women tending to rate women tougher (Billing & Alvesson, 1994; Eagly et al., 1992; Highman, 1985). In this case, the specific multilevel analysis helps untangle a debate in the organizational literature. Further research, however, is suggested in

this area to determine why women are rated as more effective leaders--researchers should strive to define and measure those domains that make a difference in the way women, as well as men, lead their academic units.

At the individual-level, the dean's perceived effectiveness is influenced by the individual's placement within the structure of the organizational unit, indicating that a faculty member's role (e.g., department chair) in the unit is affected by the exchange process. To illustrate, chairs rate the deans as more effective than faculty rate them. Department chairs may have a greater understanding of or appreciation for what the dean does, or they may receive greater rewards from them in the organization. This finding may be an example of what Hollander (1978) refers to as the dissemination of privileged information and communication. The chair has a closer interpersonal relationship and line of communication with the dean than most faculty and administrative staff within the unit or department. Moreover, Cook (1982) also refers to this as the intensity and proximity of the actors within the process of a social exchange. In this study, other individual demographics of the respondents such as sex and minority status had little or no impact on the perceptions of these exchange relationships. We would not want these to affect the perceptions of leadership effectiveness, and in this case, they do not.

The use and application of transactional social exchange in this research has provided a conceptual framework to consider the exchanges that happen between deans and their faculty and staff in terms of power and authority, and benefits and rewards. The significant findings in this study are related to these desired ends (resources and size which bring power and benefits). The perspective that these collective transactions influence both the receiver and the sender in the

exchange process provides a better understanding of the importance of the reciprocal relationships that exist between deans and their faculty and staff.

Leadership, with its multiple theoretical approaches and applications, remains a powerful phenomenon, and our understanding of leadership within the complexities of social organizations continues to evolve. Leadership effectiveness in this study has been defined and measured as one construct comprised of seven domains that represent the roles, responsibilities, and functions of the dean's leadership. Prior research on leadership evaluation in academic organizations has focused primarily on single-level analyses that involve the leader's perception of their own performance or effectiveness or the perception of their performance as evaluated by their superiors. New techniques, such as the multilevel SEM approach used in this study, can provide researchers with an important means to define and measure social processes and behaviors that exist within multiple levels of the organization; that is, this approach differentiates individuals' perceptions from the group's collective view. Moreover, at the group-level we demonstrate that the level of effectiveness is related to valued resources, providing support for the trading of benefits that takes place between deans and their faculty and staff. Multilevel modeling with latent variables also allows more refined measurement, which provides more accurate results (i.e., structural paths that are corrected for error).

## Conclusions

Most of the theoretical work to date suggests that effective leadership is best conceived as a multidimensional construct consisting of a variety of leader-follower exchange processes. It is important, therefore, to study how leaders, through their social interactions and behaviors,

influence individuals within the social systems they oversee. Throughout this study, a primary concern has been to further our understanding of how individuals and groups perceive the behaviors and processes of their leaders. Institutions can only benefit in mapping the domains of the critical social exchanges that exist between leaders and their followers. This should lead to more effective evaluation of leadership performance.

What this study suggests is that leaders, or deans, through their social interactions, need to be aware of the effectiveness of their transactions of social exchange--an effectiveness that comprises the ability to garner individual and group support, to motivate people beyond their own expectations, to conceptualize and pull ideas together, to exemplify good taste and judgment, and to possess the leadership savvy to perform the various functions, tasks, and duties in a manner and style reflective of the organization's goals and mission. In pursuit of effectiveness, the academic leader needs to bring to bear an understanding of the complexities of social exchange within an academic setting and attend to the perceptions that individuals and groups form regarding their performance.

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**Endnotes**

1.The intraclass correlation is described as the proportion of the variance in an outcome that lies between groups (deans):

$$= {}_{00} / ( {}_{00} + {}^{2} ).$$

2. We can estimate the proportion of the leadership variance that lies between-deans ($\psi_B$) relative to the total leadership variance ($\psi_T$). This corresponds to an adjustment made for the individual measurement properties of the observed variables comprising the leadership factor (e.g., differing intraclass correlations). The latent variable counterpart of an intraclass correlation for observed variables can therefore be expressed as

$$\psi_B / (\psi_B + \psi_W).$$